

Abstract of the Disclosure

A permanent magnet alternator including a stationary stator including a plurality of spaced stator poles projecting inwardly from the stator, a winding circuit wound through the spaces between the stator poles, a rotor assembly mounted for rotation within the stator, including a plurality of permanent magnets fixedly mounted on an outer circumferential surface of the rotor in alternating polarity, and a retaining shield for reducing the effects of centrifugal motion of the rotor during operation of the alternator. A voltage regulator circuit is also provided for applying the output of the permanent magnet alternator having at least one stator mounted coil to a load, and includes a rectifier circuit having an output and an input adapted to be connected to a stator mounted coil for converting alternating potential to a time varying single potential on the output, a current control circuit connected between the output of the rectifier circuit and the load, an instantaneous voltage sensing circuit connected with the output of the rectifier circuit and the current control circuit for measuring the instantaneous voltage appearing on the output and for causing the current control circuit to assume its conductive state when the instantaneous voltage is above a predetermined amount, and a regulator control circuit for sensing the voltage applied to the load by the current control circuit and for causing the current control circuit to assume its non conductive state when the voltage applied to the load is above a desired level and for shortening the time during which the current control circuit is in its conductive state as the voltage applied to the load approaches the predetermined level.